

The IBUC Advantage

All IBUCs are equipped with cutting-edge intelligent technology:

- Highest quality & exacting performance guaranteed through individual unit testing over temperature
- Superior linearity for maximum useable output power
- Amplifier overdrive protection
- User-selectable AGC/ALC for optimal performance & compatibility with modem adaptive coding
- New high capacity microprocessor & extended M&C functions
- Weatherized RJ45 Ethernet interface for simplified connection

ULTIMATE MANAGEMENT & CONTROL

- » Local Web Interface & NMS-Friendly SNMP «
- » 70+ User Configurable Thresholds & Alarms «
- » Upgraded Event Log with 1,000 Sensor Readings «
- » Performance Trend Analysis Tools & Statistical logs «
- » Embedded Web Pages for Universal Web Browser Access «

Applications

The **IBUC 2G** is a full-featured Intelligent Block Upconverter with Gallium Nitride amplifier technology. Its new versions now support multicarrier transmission across the entire Ku-band spectrum. GaN advantages include higher power in a smaller outdoor enclosure and low power consumption. Terrasat's unique implementation is designed for long lifetime performance in demanding environments.

Multiple sensors & a new, high-capacity microprocessor provide tools to optimize remote terminal performance. The **IBUC 2G** is a popular choice for SATCOM uplinks for telecom, government, defense, and other demanding applications.

Options

- 1+1 Transmit Redundancy with Eco-Mode
- High Stability Internal 10 MHz Reference with Auto-Detection
- Three Factory Select Bands (Low, Std, and Full Ku-Bands)
- Mounting Brackets
- N-Type, F-Type or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened
- WGS (Wideband Global SATCOM) compatible.

Ku-Band IBUC 2G

50W | 60W | 80W Compact GaN IBUC for multicarrier application



New Cyber
Hardened
version
available

Multicarrier
Application

50W P_{Lm} 25W
60W P_{Lm} 30W
80W P_{Lm} 40W

GaN
Tech
Amplifier

3
Year
Warranty

Ku-Band 50W | 60W | 80W IBUC 2G for Multicarrier Application

Frequency Range	RF	IF
Band 1 Std Ku-Band	14.00 to 14.50 GHz	950 to 1450 MHz
Band 2 Full Ku-Band	13.75 to 14.50 GHz	950 to 1700 MHz
Band 3 Low Ku-Band	12.75 to 13.25 GHz	950 to 1450 MHz

Input

VSWR/ Impedance	1.5:1 / 50 Ohm	
Input Connector	Type N Female (50 Ohm)	
Input Connector Options	Type F (75 Ohm), TNC (50 Ohm)	
Input Power Detector Range options:	Standard Version	WGS Version
	-55 to -20 dBm	-35 to 0 dBm

Gain

Small Signal Gain (L-band to RF) with attenuator set to 0 dB options:		
	Standard Version	WGS Version
50W	78 dB min	67 dB min
60W	79 dB min	68 dB min
80W	80 dB min	69 dB min

Attenuator Range 30 dB variable in 0.1 dB steps

Gain Flatness	
Full Band	4 dB p-p Max
36 MHz	1.5 dB p-p Max
1 MHz	0.25 dB p-p

Gain Variation Over Temperature	
Open Loop	3 dB p-p max
With AGC	1 dB p-p max

RF Output

Interface	WR75 Cover with Groove
VSWR	1.3:1 max

Output Power	50W	60W	80W
at P_{sat} (typ)	47 dBm	48 dBm	49 dBm
at P_{lin} (min)	44 dBm (25W)	45 dBm (30W)	46 dBm (40W)
19 dB min of NPR (Noise Power Ratio) at:	41 dBm	42 dBm	43 dBm

P_{lin} is the maximum linear power as defined by MIL STD 188-164C
Two-tone measured at 5MHz and 150 MHz spacing.

Level stability with ALC	± 0.5 dB
Output power detector range	Rated power to -20 dB
Power reading accuracy	± 1.0 dB max.
Spurious at P_{lin}	
In Band	-65 dBc
Out of Band	Complies with ETSI EN 301 428/430 & MIL-STD 188-164C
Harmonics at P_{lin}	-60 dBc max.
Output Noise Power Density	
	Tx < - 76 dBm/Hz
	Rx < - 145 dBm/Hz

SSB Phase Noise	External Reference	IBUC 2G
10 Hz	-115 dBc/Hz	-50 dBc/Hz
100 Hz	-140 dBc/Hz	-75 dBc/Hz
1 KHz	-150 dBc/Hz	-85 dBc/Hz
10 KHz	-155 dBc/Hz	-90 dBc/Hz
100 KHz	N/A	-95 dBc/Hz
1 MHz	N/A	-110 dBc/Hz

External Reference (Multiplexed on TX IFL)

Frequency & Level	10 MHz	-12 to +5 dBm
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Internal Reference - Optional

Local Oscillator Frequency

Sense	Non-Inverting
Band 1	13050 MHz
Band 2	12800 MHz
Band 3	11800 MHz

IBUC Power Supply

Voltage	DC	AC
	37 to 60 VDC	100 to 240 VAC
Power Consumption	at P_{lin} / P_{sat}	at P_{lin} / P_{sat}
50 W	260 W / 300 W	275 VA / 325 VA
60 W	350 W / 420 W	375 VA / 450 VA
80 W	N/A	475 VA / 570 VA

Monitor & Control - For Standard Versions

Ethernet (HTTP, Telnet, SNMPv2c) via RJ45 Connector

RS232/485, Handheld Terminal via MS-Type Connector

FSK multiplexed on TX IFL

Monitor & Control - For Cyber Hardened Versions

Ethernet (HTTPS, SSHv2, SNMPv3 with USM and VACM) via RJ45 Connector

RS232 via MS-Type Connector

XSS (Cross Site Scripting)

Two NTP Servers Providing Redundancy

FIPS 140-2 compatible.

The Cyber Hardened versions have embedded new high-end Cyber Security features, from hardware to software, including a new controller board and the new firmware.

Environmental

Operating Temperature	-40°C to +55°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

Mechanical

Weight	13.5 lbs 6.1 kg
Size	10.5 x 6 x 6.1 x in. 267 x 152 x 155 mm

(Dimensions not including isolators)